IN THE CLAIMS:

Please amend claims 1-5. Please add new claims 14-26. Claims 1-26 are pending in the application.

1. (Currently Amended) A reactor for growing a gallium containing single crystal on a substrate, comprising:

a reactor tube;

a substrate positioned in the reactor tube;

a multi-zone heater;

a growth zone in the reactor tube, wherein said multi-zone heater maintains said ~~at least one~~ substrate within said growth zone at a growth temperature greater than 850°C.;

an extended gallium source at least partially in the reactor tube and within a multi-zone gallium source zone, said extended gallium source being controllably positionable so that ~~wherein~~ said multi-zone heater maintains a first portion of said extended gallium source at a first temperature greater than 450°C. while simultaneously maintaining a second portion of said extended gallium source at a second temperature in the range of 30°C. to 100°C., wherein upon reaction initiation said second portion comprises at least 50 percent of said extended gallium source;

a halide reaction gas source coupled to said multi-zone gallium source zone;

an inert gas source coupled to said multi-zone gallium source zone to transport a first reaction product from said multi-zone gallium source zone to said growth zone; and

a reaction gas source coupled to said growth zone; and

growth of the gallium-containing single crystal occurring on the substrate in the reactor tube.

2. (Currently Amended) The reactor of claim 1, ~~wherein~~ said extended gallium source being controllably positionable so that upon reaction initiation said second portion comprises at least 90 percent of said extended gallium source.

3. (Currently Amended) The reactor of claim 1, ~~wherein~~ said extended gallium source being controllably positionable so that said second temperature is in the range of 30°C. to 40°C.

4. (Currently Amended) The reactor of claim 1, further comprising a first aluminum source zone, wherein said halide reaction gas source and said inert gas source are coupled to said first aluminum source zone, and ~~wherein~~ said first aluminum source zone being controllably positionable

so that said multi-zone heater maintains said ~~a~~ first aluminum source within said first aluminum source zone at ~~to~~ a third temperature ~~greater than 700°C~~.

5. (Currently Amended) The reactor of claim 4, further comprising a second aluminum source zone, wherein said halide reaction gas source and said inert gas source are coupled to said second aluminum source zone, and ~~wherein~~ said first aluminum source zone being controllably positionable so that said multi-zone heater maintains said ~~a~~ second aluminum source within said second aluminum source zone at ~~to~~ a fourth temperature ~~greater than 700°C~~.

6. (Original) The reactor of claim 1, wherein said multi-zone heater is a multi-zone resistive heater furnace.

7. (Original) The reactor of claim 1, further comprising an acceptor impurity source zone, wherein said inert gas source is coupled to said acceptor impurity source zone, and wherein said multi-zone heater maintains an acceptor impurity within said acceptor impurity source zone at a third temperature.

8. (Original) The reactor of claim 1, further comprising a donor impurity source zone, wherein said inert gas source is coupled to said donor impurity source zone, and wherein said multi-zone heater maintains a donor impurity within said donor impurity source zone at a third temperature.

9. (Original) The reactor of claim 1, further comprising means for transferring said at least one substrate within said growth zone to a second growth zone.

10. (Original) The reactor of claim 9, wherein said multi-zone heater maintains said at least one substrate within said second growth zone at a third temperature.

11. (Original) The reactor of claim 10, wherein said growth temperature is in the range of 1,000°C. to 1100°C. and wherein said third temperature is in the range of 850°C. to 1,000°C.

12. (Original) The reactor of claim 1, wherein said halide gas source supplies HCl gas.

13. (Original) The reactor of claim 1, wherein said reaction gas source supplies ammonia gas.

14. (New) The reactor of claim 1 being configured for use with a modified hydride vapor phase epitaxial (HVPE) process.

15. (New) The reactor of claim 1, further comprising a control rod, said control rod being manipulated to control the position of said extended gallium source.

16. (New) The reactor of claim 1, at least a portion of said extended gallium source extending located outside of the reactor tube.

17. (New) The reactor of claim 1, said extended gallium source being moveable between a first position and a second position.

18. (New) The reactor of claim 17, wherein the entire extended gallium source is within the reactor tube at both of the first and second positions.

19. (New) The reactor of claim 17, wherein at least a portion of said extended gallium source is located outside of the reactor tube at least one of the first and second positions.

20. (New) The reactor of claim 17, said extended gallium source being controllably positioned so that the extended gallium source is moveable into and out of the reactor tube.

21. (New) The reactor of claim 1, said extended gallium source comprising an extended gallium source tube.

22. (New) The reactor of claim 1, said extended gallium source being controllably moveable relative to the reactor tube.

23. (New) The reactor of claim 1, said substrate being moveable independently of said extended gallium source.

24. (New) The reactor of claim 1, said substrate being in the reactor tube and separate from said extended gallium source.

25. (New) The reactor of claim 4, wherein said third temperature is greater than about 700°C.

26. (New) The reactor of claim 6, wherein said fourth temperature is greater than about 700°C.